

**TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT**

(Under 37 CFR 1.97(b) or 1.97(c))

Docket No.  
KNS0002-US

In Re Application Of:

GUPTA

FEB 03 2004

Serial No.  
10/628,289Filing Date  
July 29, 2003Examiner  
Not Assigned YetGroup Art Unit  
2123Title: **PREDICTION OF CAVITY SIZE IN PACKED BED SYSTEMS USING NEW CORRELATIONS AND MATHEMATICAL MODEL**

Address to:

Assistant Commissioner for Patents  
Washington, D.C. 20231**37 CFR 1.97(b)**

1. ☒ The Information Disclosure Statement submitted herewith is being filed within three months of the filing of a national application other than a continued prosecution application under 37 CFR 1.53(d); within three months of the date of entry of the national stage as set forth in 37 CFR 1.491 in an international application; before the mailing of a first Office Action on the merits, or before the mailing of a first Office Action after the filing of a request for continued examination under 37 CFR 1.114.

**37 CFR 1.97(c)**

2. ☐ The Information Disclosure Statement submitted herewith is being filed after the period specified in 37 CFR 1.97(b), provided that the Information Disclosure Statement is filed before the mailing date of a Final Action under 37 CFR 1.113, a Notice of Allowance under 37 CFR 1.311, or an Action that otherwise closes prosecution in the application, and is accompanied by one of:

☐ the statement specified in 37 CFR 1.97(e);**OR**☐ the fee set forth in 37 CFR 1.17(p).

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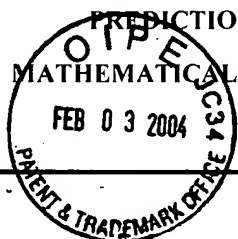
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*Laurence D. Lin* (41,009)  
Signature

Dated: February 3, 2004

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		<b>Application Number</b>	10/628,289
		<b>Filing Date</b>	July 29, 2003
		<b>First Named Inventor</b>	GUPTA
		<b>Art Unit</b>	2123
		<b>Examiner Name</b>	Not Yet Assigned
<b>Sheet</b> 1	<b>of</b> 2	<b>Attorney Docket Number</b>	KNS0002-US
<b>OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS</b>			
<b>Examiner Initials</b>	<b>Cite No.<sup>1</sup></b>	<b>Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.</b>	<b>T<sup>2</sup></b>
		Apte, V.B et al., "Stress Distribution in a Packed Bed Above Raceway Cavities Formed by an Air Jet", <u>AIChE Journal</u> , Vol. 36, No. 3, pp. 461-468 (March 1990).	<input type="checkbox"/>
		Apte, V.B. et al., "Gas Flows in Raceways Formed by High Velocity Jets in a Two-Dimensional Packed Bed", <u>Chem. Eng. Res. Des.</u> , Vol. 66, pp. 357-362 (July 1988).	<input type="checkbox"/>
		Chong, Y.O. et al., "Operating Mechanism of a Conical Fluidized Bed", <u>Fluidization and Industrial Applications</u> , Chapter 36, pp. 1127-1144.	<input type="checkbox"/>
		Doyle, III, F.J. et al., "The Phenomenon of Pinning in an Annular Moving Bed Reactor with Crossflow of Gas", <u>Chemical Engineering Science</u> , Vol. 41, No. 6, pp 1485-1495 (1986).	<input type="checkbox"/>
		Elliott, J.F. et al., "Physical Conditions in the Combustion and Smelting Zones of a Blast Furnace", <u>Journal of Metals</u> , pp. 709-717 (July 1952).	<input type="checkbox"/>
		Flint, P.J. et al., "A Fundamental Study of Raceway Size in Two Dimensions", <u>Metallurgical Transactions B</u> , Vol. 23B, pp. 267-283 (June 1992).	<input type="checkbox"/>
		Hatano, M. et al., "Analysis of the Combustion Zone in the Experimental Blast Furnace", <u>Transactions ISIJ</u> , Vol. 17, pp. 102-109 (1977).	<input type="checkbox"/>
		Jackson, R. et al., "Shorter Communication Further Consideration of the Effect of Aeration on the Flowability of Powders", <u>Trans IchemE</u> , Vol. 59, pp. 119-121 (1981).	<input type="checkbox"/>
		Lister, J.D. et al., "Size Hysteresis in a Two Dimensional Model Raceway", <u>The Nineteenth Australasian Chemical Conference Newcastle, Australia</u> , 18 <sup>th</sup> -20 <sup>th</sup> , pp. 476-483, September 1991.	<input type="checkbox"/>
		MacDonald, J.F. et al., "Void Formation in Stationary and Moving Beds", <u>Chemical Engineering Science</u> , Vol. 52, No. 5, pp. 677-691 (1977).	<input type="checkbox"/>
		Nishi, Tetsu et al., "Relationship between Shape of Raceway and Productivity of Blast Furnace Taking Account of Properties of Coke Sampled at Tuyere Level", <u>Transctions ISIJ</u> , Vol. 22, pp. 287-296 (1982).	<input type="checkbox"/>

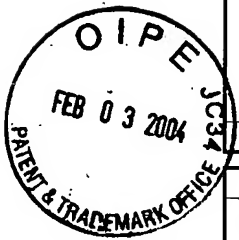
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		<b>Examiner Name</b>	Not Yet Assigned
		<b>Attorney Docket Number</b>	KNS0002-US
Sheet	2	of	2

### OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		Povermo, J.J. et al., "An Experimental Measurement of Raceway Dimensions in Bethlehem Steel Corporation's Bethlehem, Pa. Plant", pp. 383-401.	
		Sarkar, S. et al., "A Cold Model Study of Raceway Hysteresis", <u>Metallurgical and Materials Transactions B, Volum 34B</u> , pp. 183-191 (April 2003).	<input type="checkbox"/>
		Sastry, G.S.S.R.K. et al., "Cold Model Study of Raceway Under Mixed Particle Conditions", <u>Ironmaking and Steelmaking</u> , Vol. 30, No. 1, pp. 61- 65 (2003).	<input type="checkbox"/>
		Sastry, G.S.S.R.K. et al., "Void Formation and Breaking in a Packed Bed", <u>ISIJ International</u> , Vol. 43, No. 2, pp. 153-160 (2003).	<input type="checkbox"/>
		Szekely J. et al., "A Mathematical and Physical Representation of the Raceway Region in the Iron Blast Furnace", <u>Metallurgical Transactions B</u> , Volume 6B, pp. 119-129 (March 1975).	<input type="checkbox"/>
		Tsinontides, S.C. et al., "The Mechanics of Gas Fluidized Beds with an Interval of Stable Fluidization", <u>J. Fluid Mech.</u> , Vol. 255, pp. 237-274 (1993).	<input type="checkbox"/>
		Wagstaff, J.B. et al., "Comparison of Blast Furnace Penetration with Model Studies", <u>Journal of Metals</u> , pp. 370-376 (March 1957).	<input type="checkbox"/>
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